Factors Influencing Obesity Among Preschoolers: Multi-Level Approach

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Background
- Childhood obesity is a major health concern in the U.S.
- One-third of children aged 2 to 5 years are overweight or obese in the State of Florida
- Childhood obesity is determined through the complex interactions among family, environment, and social behaviors
- Multiple ecological approaches have been recommended as effective means to prevent and control childhood obesity

Purpose
To examine the contributing factors for early childhood obesity within a multi-level context, including child and family, child care setting, and community

Design
- A cross-sectional, quantitative research design
- Conceptual framework: Ecological model

Methods
- Parents and preschool directors completed self-administered survey questionnaires
- Preschoolers' weight and height were measured
- Sample & setting (n=129): Parents and preschoolers participated in public (4) and private (6) preschools in Northwest Florida
- Data analysis:
  - Childhood obesity: BMI-for-age ≥ 85th percentile based on the CDC gender-specific growth charts
  - Logistic regression was used to examine factors at different levels (child and family, child care setting, and community) related to obesity among preschoolers

Table 1. Adjusted Odds Ratios, Risk of Obesity by Racial/Ethnic Groups

<table>
<thead>
<tr>
<th>Racial/Ethnic Group</th>
<th>Adjusted Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Reference</td>
</tr>
<tr>
<td>Black</td>
<td>2.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.5</td>
</tr>
<tr>
<td>Asian</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Results
- Multifaceted factors at different levels related to childhood obesity in this study
- Child's healthy routines in preschool had an inverse relationship with childhood obesity
- Neighborhood food environments and physical activity environments were significantly lower among obese children
- Overall obesity prevalence was 20.9%, Whites (58.6%), Girls (51.9%)

Discussion
- Child and family factors:
  - Boys were less likely to be obese than girls
  - Higher family income levels were negatively related to childhood obesity
- Child care factors:
  - Overweight children more likely to be cared for in preschools without physical activity and screen time policies
- Community factors:
  - Having a chain supermarket near home was associated with significantly lower obesity rates
  - Neighborhood safety was negatively related to childhood obesity

Implications
- Efforts are needed to increase the prevalence of healthy daily routines, such as daily physical activity and to decrease the prevalence of sedentary behaviors in child care settings
- Build a healthy environment and reduce the obesogenic environment should be considered when developing childhood obesity intervention programs

Acknowledgements
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References
- Prevalence of obesity among low-income, preschool-aged children (CDC, 2013)
- Procedures
- Sample & setting (n=129)
- Data analysis
- Table 1. Adjusted Odds Ratios, Risk of Obesity by Racial/Ethnic Groups

Conclusions
- This study is important as future interventional studies will require a deep understanding of the effects of multifaceted environmental factors on childhood obesity